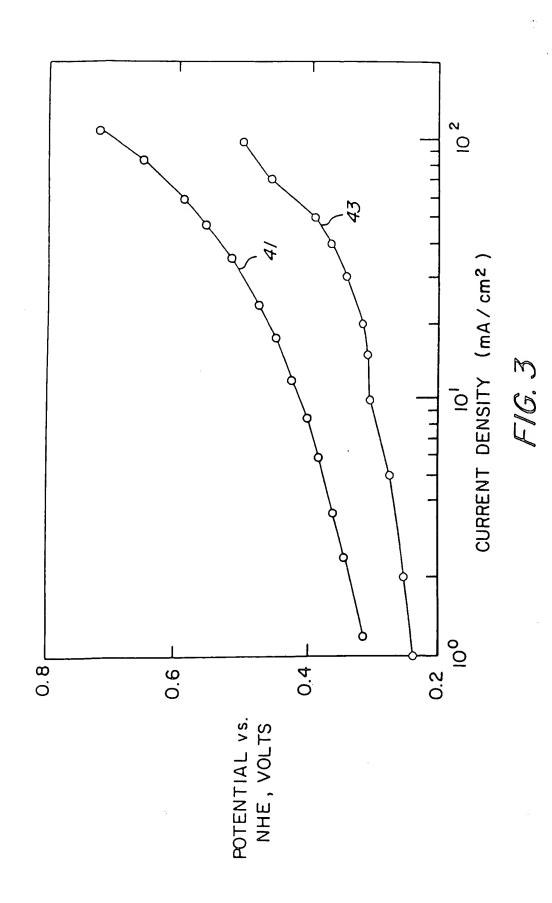
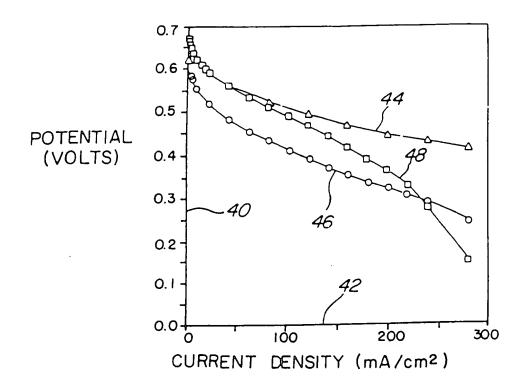


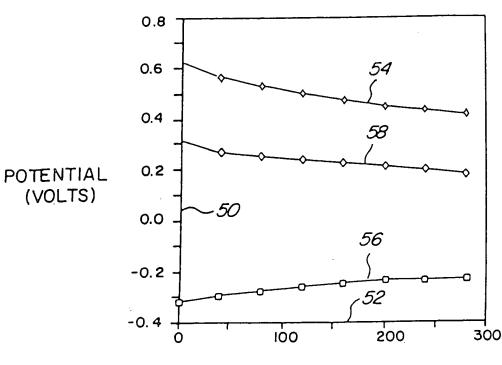
F16.2



F/G. 5



F1G. 6



CURRENT DENSITY (mA/cm2)

,302

IMMERSE THE CARBON ELECTRODE STRUCTURE IN 1% SOLUTION OF NAFION IN METHANOL FOR ABOUT 5 MINUTES TO ACHIEVE IMPREGNATION OF THE NAFION INTO THE ELECTRODE TO A LOADING OF $0.1-0.5\,\text{mg}\,/\,\text{cm}^2$.

304

REMOVE ELECTRODE FROM SOLUTION AND DRY IN VACUUM.

FIG. 7

F/G. //

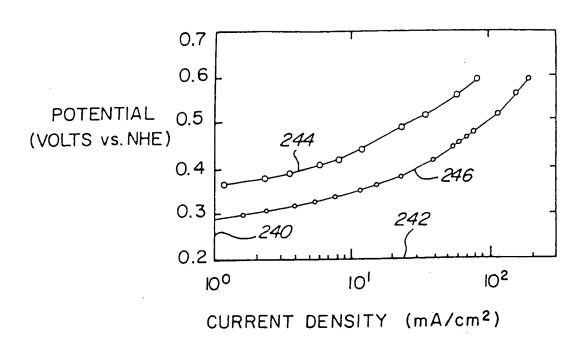
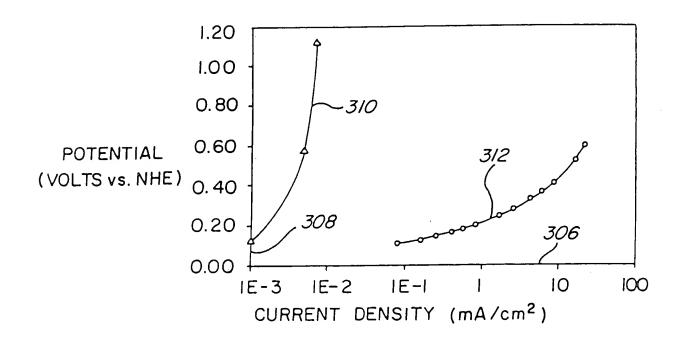


FIG. 8



, 200

PREPARE CARBON ELECTRODE STRUCTURES FROM A MIXTURE OF 200m2/g HIGH SURFACE AREA CARBON PARTICLES AND TEFLON BINDER (15%) APPLIED TO A FIBER-BASE CARBON PAPER.

r 202

PREPARE A BATH OF HYDROGEN
HEXACHLOROPALTINATE AND POTASSIUM
PENTACHLOROAQUORUTHENIUM WITH A METAL
ION CONCENTRATION IN THE RANGE OF QOI-QO5M
DISSOLVED IN 1M SULFURIC ACID.

~204

ADD PERFLUOROOCTANESULFONIC ACID TO BATH WITH A CONCENTRATION IN THE RANGE OF 0.1-1.0g1-1

-206

POSITION THE CARBON ELECTRODE IN THE BATH ALONG WITH A PLATINUM ANODE.

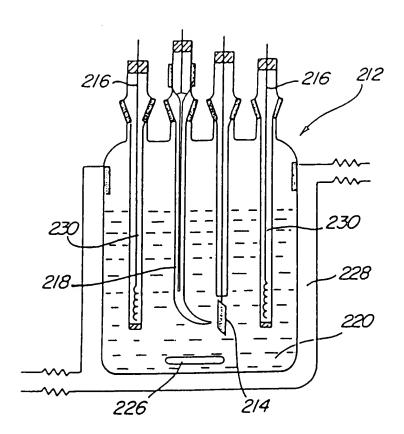
₁208

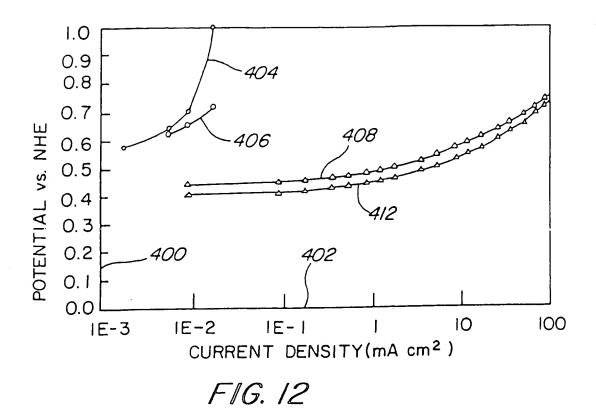
APPLY A VOLTAGE BETWEEN THE CARBON ELECTRODE AND THE ANODE FOR ABOUT 5-10 MINUTES TO ACHIEVE ELECTRODEPOSITION OF PLATINUM-RUTHENIUM TO A LOADING OF ABOUT 5 mg/cm².

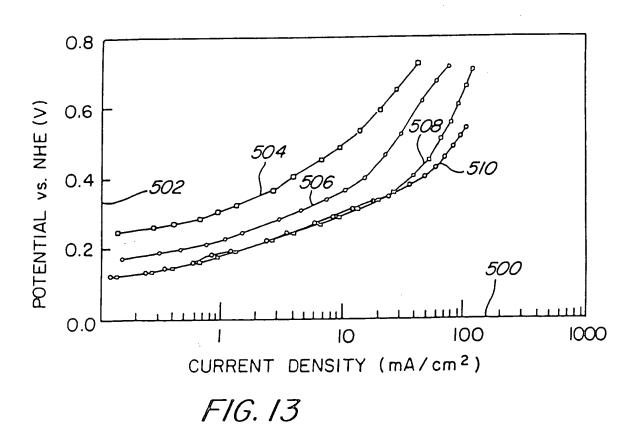
~210

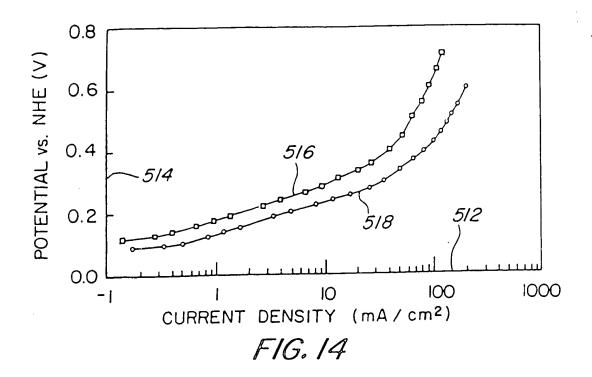
REMOVE CARBON ELECTRODES FROM BATH AND WASH IN DEIONIZED WATER.

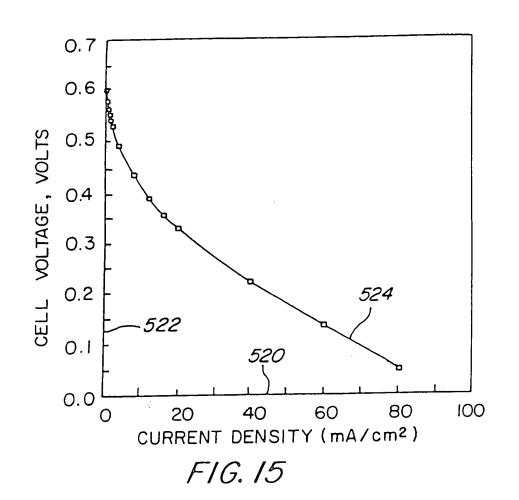


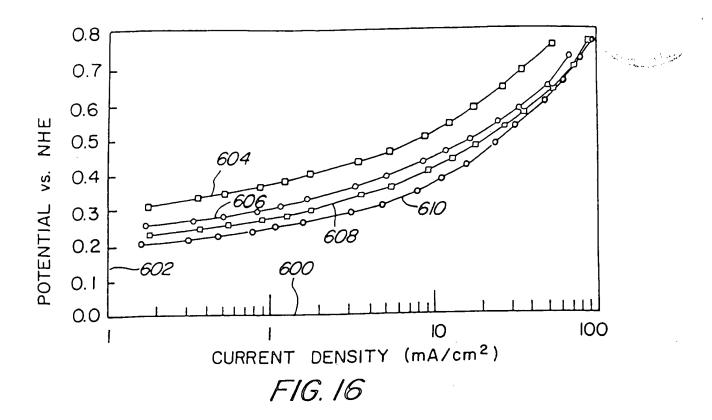


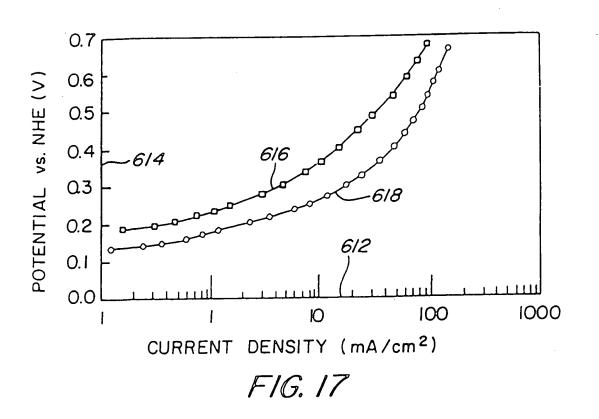


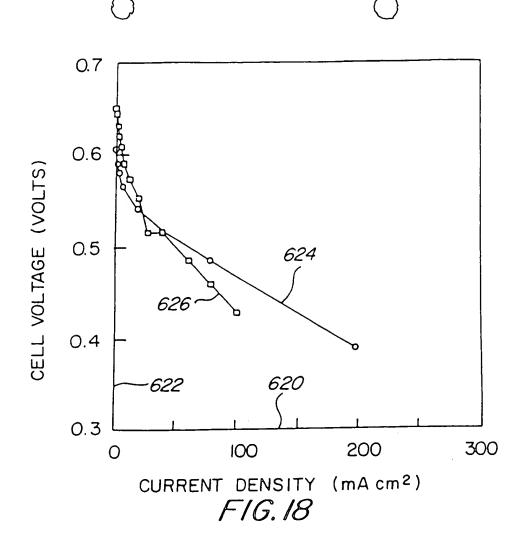


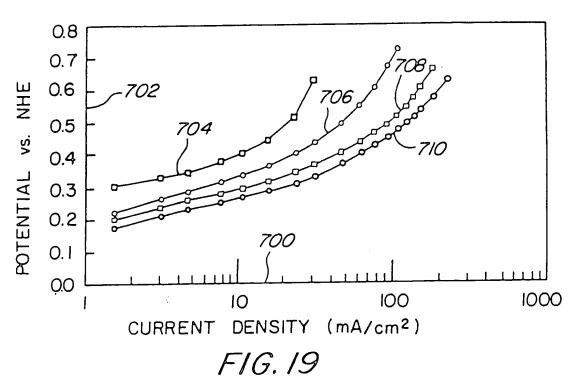


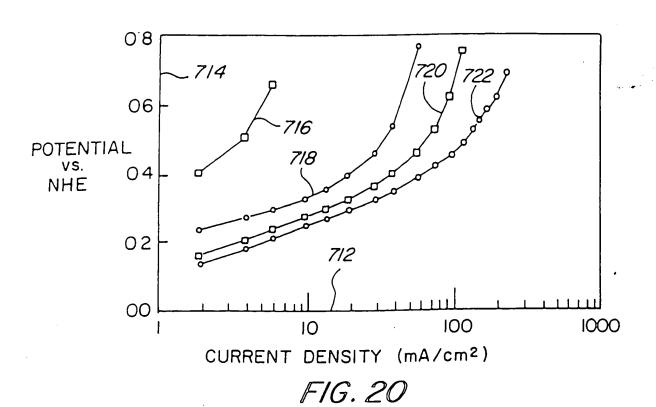




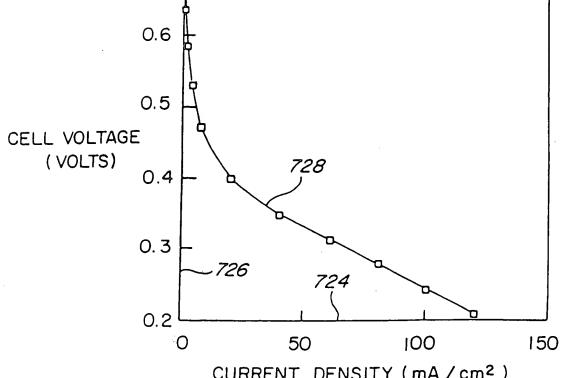








0.7



CURRENT DENSITY (mA/cm²)
FIG. 21